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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/900,254 07/25/97 PFEUFFER

P 22750/350

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EXAMINER

YAD, S

ART UNIT

PAPER NUMBER

1733

DATE MAILED:

10/01/99

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trad marks

Office Action Summary

Application No.

08/900,254

Applicant(s)

Pfeuffer

Examiner

Sam Chuan Yao

Group Art Unit

1733



☒ Responsive to communication(s) filed on Aug 30, 1999

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-4 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-4 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al (US 4,496,583) in view of (Meyer (US 5,232,595) or Narou et al (US 4,876,007)) and Norton (US 2,862,542) for reasons of record set forth in Paper No. 14 paragraph 2.

Response to Arguments

3. Applicant's arguments filed on 08-30-99 have been fully considered but they are not persuasive.

Applicant argues on page 2 that Yamamoto teaches away from calendering the filter material through a profiled calender rolls because Yamamoto states "that the properties of the filter material is inferior if the [un]drawn fibers become crimped.". In response, it is submitted that not all, if any, of the drawn fibers will become crimp during the calendering operation of the filter

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material using a profiled calender rolls. Moreover, even if there is fiber crimping during the calendering operation, the number of crimp or fold/inch is reasonably expected to be about 1 only.

The results of example 11, which illustrates a filter material using mechanically crimped fibers having about 1 crimp/inch, indicate that the volume fraction is 0.072 and the coefficient of air flow resistance (dyne · s/cm⁴) is 7200. These values fall within the workable and even with the preferred property ranges for the filter material of Yamamoto et al which are 1,000-50,000 dyne · s/cm⁴ (preferably, 2,500-20,000) for the resistance coefficient and .01-.24 (preferably, .01-.20) for the volume fraction. (col. 3 lines 33-43). Moreover, although it is desired to use fibers with substantially no crimp, Yamamoto et al also discloses that “However, the drawn polyester staple fibers may have a small number of crimps naturally created on the fibers during the fiber-producing procedure.” (emphasis added). Thus, there is a reasonable expectation of success in forming an effective corrugated filter.

On page 2 paragraph 1, Applicant further argues that “... claim 1 requires that during the calendering process, the undrawn fibers be bonded”, while none of the references teaches this recited process step. Contrary to Applicant’s assertion, it is submitted that the modified process of Yamamoto et al naturally bond the undrawn fibers during the calendering process using a pair of profiled rolls. Note that, Yamamoto et al teaches using undrawn fibers to fuse the fibers together at a low temperature of 110 °C to 200 °C (col. 3 lines 11-21) and also teaches forming a paper-like filter by calendering (col. 5 lines 1-4). One in the art reading the collective teachings of the art of record, wanting to form a corrugated filter material for the advantages taught by either

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Meyer or Narou et al, would have used a profiled rolls instead of a conventional calender rolls during the calendering operation so that a corrugated filter material is manufactured instead of a flat filter sheet.

As for Applicant's argument regarding Norton , since Yamamoto et al teaches using undrawn fibers to fuse-bond the fibers together, one in the art would have readily recognized and appreciated that the use of resin to bond the fibers is unnecessary in the modified process of Yamamoto et al. Moreover, the recited claims do not preclude impregnating the web (comprising drawn and undrawn fibers) with resin in the modified process of Yamamoto et al.

As for Applicant's argument regarding the various ways of calendering the fibrous web on page 3, Applicant's attention is referred to Paper No. 14 paragraph 2 on page 4. It is further submitted that one in the art would have understood and appreciated that what is essential in calendering the fibrous web of Yamamoto et al is to ensure that the web is sufficiently hot to at least soften the undrawn fibers during the calendering process in order to effectively bond the fibers. A preference on whether to perform any one of the recited process in claims 2-4 is well within the purview of choice in the art. It is submitted that obviousness in the sense of § 103 can be based on common sense and logic without any specific suggestion in the prior art relied upon. In re Bozek, 416 F.2d 1385, 163 USPQ 545, 549 (CCPA 1969). See also In re Sovish, 769 F. 2d 738, 226 USPQ 771, 774 (Fed. Cir. 1985).

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Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Sam Chuan Yao** whose telephone number is (703) 308-4788. The examiner can normally be reached on Monday-Thursday from 8:00 AM-5:30 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mike Ball, can be reached on (703) 308-2058. The fax number in Group Art Unit 1733 for any official papers (i.e. papers that

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will be entered as part of the file wrapper) is (703) 305-7718 and for unofficial papers (e.g. proposed amendments) is (703) 305-7115.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0651.


Sam Chuan Yao
Primary Examiner
Art Unit 1733

scy
September 30, 1999